



Description of  
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Description to known jump joint prostheses permit an articulation around a transverse axis. They are able to give way to the rotation possible of the natural jump joint beyond this articulation however to only very limited. They have also the disadvantage the fact that they give the mutual position of the joint-flat obligatorily and thus in case of of deviations of the prosthetic reconstructed joint structure of the natural structure the volume apparatus unphysiologisch stresses.

Finally they require a frequent lateral opening of the joint, which is undesirable.

The invention is the basis the object to create a jump joint prosthesis the larger freedom of movement allowed.

The solution according to invention consists of the fact that between the seeming leg component and the jump leg component intermediatedirected-hurry disposed is, which with the two components over an articulation joint on the one hand and over a rotation joint also to the vertical axis parallel axis of rotation cooperates.

< Desc/Cims PAGE NUMBER 5>

The formation of the articulation joint between the jump leg component and intermediatedirected-hurry can arbitrary type be. Preferred one becomes that cooperation of these parts of über roll faces. This applies in particular with the formation of the jump leg component as cap prosthesis.

In order to avoid an uncontrolled swimming of intermediate directed ILS, this sideguided should be, preferably opposite the jump leg component, although also a side guide with the seeming leg component comes into question. The side guide formed with the jump leg component lies appropriately within dor roll faces, so that it does not interfere with the lateral sliding surfaces, which cooperate with the two Malleolen. The side guide becomes formed after an other feature of the invention of a rib longitudinal in AP-direction in the one and a groove in the other roll face, appropriate in addition, whereby the rib is zweckmässigerweise on the sliding surface of the jump leg component provided.

The seeming leg component and intermediatedirected-hurry cooperate appropriately over planar, essentially sliding surfaces disposed transverse to the vertical axis, because these permit not only a rotation but also any displacement to the adaptation of the prosthesis to the volume apparatus. It becomes placed on the side adjustment less value, however different surfaces of revolution can become around the vertical axis selected, for example a flat trough on and a flat crest on the other side, appropriate in addition, also by the planar shape. The bottom vertical axis is in this connection one for seeming leg direction about parallel axe to be understood.

The jump leg component formed as cap prosthesis exhibits zweckmässigerweise planar side walls, which largleitflächen the Malleole form. From these the lateral side wall in its dorsal portion

▲ top

is to exhibit a recess, over

< Desc/Cims PAGE NUMBER 6>

the there located tapes and/or. To give Knochenvorsprünge place.

With the formation jump joint component as cap prosthesis one aims at einan as exact appropriate a seat at the associated Resektionsflächen of the jump leg as possible, in particular with cement-free implantation. Since one can reproduce one the walzenförmigen joint-flat corresponding curved inner surface only more severe at the bone, those becomes according to invention the jump leg turned surface that the joint-flat formed wall from planar surfaces composite. A middle surface runs vertical for seeming leg direction. Agent of sawing teachings orienting at the seeming leg direction this surface can become easy formed. A front surface runs parallel to the Fussrücken. Corresponding sawing teachings oriented itself either at the direction of the Fussrückens or at the direction tibias with maximum flexion of the jump joint. Finally a rear, sloping surface is provided, which is more achievable foot position overstretched by vent ral in. In this way it is possible, the jump beinkomponente to begin from the front ago. This applies, even if she carries additional projections to the anchorage in the jump leg, which are appropriately performed for it as rib longitudinal in AP-direction.

The prosthesis part which can be embodied at the tibia is likewise appropriately provided with at least finer Vorankerungsrippe, which runs in AP-direction, in order to make the implantation possible from the front. This rib has according to the invention constant cross section, so that the associated groove in the bone can become generated by a clearing procedure accomplished from the front. If the rib essentially possesses circular cross-section, the associated bone slots can become simple drilled bottom aid of a suitable drill-gauge, itself at the layer of the Resektionsfläche and/or the direction of the tibia oriented. Thus the rib in the so formed

< Desc/Cims PAGE NUMBER 7>

Groove also with cement-free anchorage safe stop finds, can be provided it with detention increases and recesses.

The invention becomes in the following more near bottom reference on the drawing explained, an advantageous embodiment the illustrated. In it show! Fig. 1 a side view of the prosthesis with the surrounding skeleton hurrying of lateral, Fig. 2 the same side view without skeleton hurry, Fig. 3 a vent ral opinion, Fig. 4 to 6 perspective views of the three Prosthesis parts, Fig. 7 to 9 lateral opinions, Fig. 10 to 12 plan views, Fig. 13 to 15 vent ral opinions and Fig. 16 to 19 bottom-laterally views of the prosthesis parts.

In Fig. one recognizes 1 that the joint-flat of the jump leg 1 is 2 replaced by the jump leg component implemented as cap prosthesis. The resezierten joint parts 3 tibia 4 are by the seeming leg component 5 and intermediatedirected-hurry 6 replaced. The Wadenbein remains unchanged.

The jump leg component 6 forms a sliding surface 10, which is as surface of revolution around a transverse axis 28, for example cylindrical, formed, whereby those should be axis of rotation identical with the natural articulation transverse axis of the jump joint. The joint-flat 10 contains a rib 11, which runs in AP-direction in its center.

The rolling-joint-flat lateral Malleolargeitflächen 12 (lateral) and 13 (medial) follows 10. Those the joint-flat 10 to 13 formed walls result in together a cap form, how results from the drawing in detail and their outer shape of the natural shape of the sliding surfaces of the jump joint very close comes. The inner surfaces are too

< Desc/Cims PAGE NUMBER 8>

the corresponding processed surfaces of the jump leg 1 with cement-free implantation as exact ones as possible fit. While those the Mallejlargeitflächen 12.13 on the inside corresponding surfaces this parallel and ben of ill repute and therefore by means of saw and sawing teachings easy. mbar are, consist those the rolling sliding surface 10 on the inside counter over-located surface of three planar, parallel surfaces longitudinal to the hinge axis, i.e. a middle surface 14,

which runs parallel to the Palmarebene of the foot and vertical to the vertical axis, a front, sloping surface 15 and a rear, sloping surface 16. Also these surfaces can, as are copied more near above described at the jump leg 1 easy by means of corresponding sawing teachings.

In the center of the undersurface a vertical and rib longitudinal in APrichtung is provided, which, in particular with cement-free anchorage, forms an additional fuse.

Those the bone turned surfaces or parts of this component can be so formed that they offer increasing bones anchorage recesses or other detention possibilities to that.

Those the lateral Malleolargeitfläche 12 formed wall is not as far down-drawn over their full length as the medial 13. It points rather in the region 17, D. h. in its rear third, a cutout up. The corresponding natural ratios is the jump joint component 2 at their ventralen side (in Fig. 10 down) somewhat wider as at the dorsal.

The seeming leg component, whose views in the highest series of the single representations appear, essentially consists of a plate 19, whose planar undersurface 20 forms a Gleitfläche. If their top carries it for two ribs 21 f the parallel to each other and to the plate 19 in APrichtung run and predominant circular cross-section possess (S. Fig. 15) and in the region of their connection with the plate 19

< Desc/Cims PAGE NUMBER 9>

corresponding rear-cut is. They possess increases 22 to the improvement of the initial strength. Into the spaces between the Increases 22 bone tissue grows to the final anchorage in.

This embodiment of the ribs 21 has the advantage that too their receptacle certain grooves 23 by simple drilling of vent ral generated to become to be able, parallel the Resektionsfläche 24. Their simple moulding contributes to shorten the operation duration and to reduce the risk from Implantationafehlern to.

Between the jump leg component 2 and the seeming leg component 5 is intermediatedirected-hurries 6, the top side a planar sliding surface 25 appropriate to the sliding surface 20 forms. On its underside it exhibits a rolling-joint-flat 26, which essentially agrees with the joint-flat 10 of the component 2. In the agents this joint-flat 26 one is in AP-direction longitudinal groove 27, which forms the common mentioned above side guide with the rib 11.

Just as the jump leg component 2 consists the seeming leg component 5 appropriately of a fabric-compatible metal, while intermediatedirected-hurry 6 of polyethylene with high molecular weight consists.

The prosthesis gives in Fig. 2 and 3 by arrows angedeu teten degrees of freedom of the joint movement, i.e. between the prosthesis parts of 2 and 6 takes place a pivotal movement around the transverse axis 28, whereby part is 6 lateral by the rib 11 and the groove 27 fixed, and the planar sliding surface 20, 25 allowed rotational movements as well as transverse movements into all directions.

The advantages of the prosthesis according to invention consist to the one of the fact that them a large reproduction of the natural

< Desc/Cims PAGE NUMBER 10>

The advantages of the prosthesis according to invention consist to the one of the fact that them a large reproduction of natural movement conditions of the jump joint and an adaptation of the layer of the joint parts to the requirements of B & ndapparates allowed. To the other possible it an operation exclusive of vent ral bottom application relationship MOS victory of simple and by Säge-und drill-gauges safe conductible machining operations.

The composition of the undersurface the jump leg cap pro thesis from the surface portions 14.15 and 16 earns if necessary.

Protection independent of the remaining aspects of the invention.

The same applies for first seeming leg pro to the equipment thesenteila also in AP-direction longitudinal and preferably cylindrical ribs.